



00-617-F.ST25.txt
SEQUENCE LISTING

<110> Oregon Health & Science University
Hefeneider, Steven
Bennett, Robert
Seiss, Donald
Merkins, Louise

<120> Mammalian Cell Surface DNA Receptor

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<140> US 10/619992

<141> 2003-07-15

<150> 09/921,099

<151> 2001-08-01

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<170> PatentIn version 3.3

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Page 8

530

535

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Phe	Ala	His	Ser	Gln	Glu	Glu	Leu	Glu	Lys	Tyr	Arg	Leu	Arg	Asn	Lys		
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Gln	Lys	Ser	Ser	Pro	Phe	Leu	Thr	Arg	Val	Pro	Val	Tyr	Pro	Pro	His	
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Val	Pro	Ala	Gly	Val	Ala	Pro	Cys	Val	Pro	Arg	Phe	Val	Arg	Ser	Asn	
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gtg Val 865	tta Leu	atg Met	gac Asp	ctg Leu	gac Asp 870	agt Ser	ggt Gly	gat Asp	gtt Val	aag Lys 875	aga Arg	aga Arg	gta Val	cat His	tta Leu 880	3241
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agg gat atc gag tta gag ctt tca gca ctt gat act gat gaa cct Arg Asp Ile Glu Leu Glu Leu Ser Ala Leu Asp Thr Asp Glu Pro 1055 1060 1065	3805
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 485 490 495
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 Ser Thr Leu Arg Ala Leu Glu Thr Val Lys Lys Val Gly Lys Val Gly
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690

695

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Asn Ser Leu Asp Gly Tyr Tyr Ser Val Ala Cys Gln Pro Pro Ser Glu
740 745 750

Pro Arg Thr Thr Val Pro Leu Pro Arg Glu Pro Cys Gly His Leu Lys
755 760 765

Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
770 775 780

Tyr His Thr Gln Lys Ala Pro Leu Val Ser Ser Thr Leu Pro Val Ala
785 790 795 800

Thr Gln Ser Pro Thr Pro Pro Ser Pro Leu Phe Ser Val Asp Phe Arg
805 810 815

Ala Asp Phe Ser Glu Ser Val Ser Gly Thr Lys Phe Glu Glu Asp His
820 825 830

Leu Ser His Tyr Ser Pro Trp Ser Cys Gly Thr Ile Gly Ser Cys Ile
835 840 845

Asn Ala Ile Asp Ser Glu Pro Lys Asp Val Ile Ala Asn Ser Asn Ala
850 855 860

Val Leu Met Asp Leu Asp Ser Gly Asp Val Lys Arg Arg Val His Leu
865 870 875 880

Phe Glu Thr Gln Arg Arg Thr Lys Glu Glu Asp Pro Ile Ile Pro Phe
885 890 895

Ser Asp Gly Pro Ile Ile Ser Lys Trp Gly Ala Ile Ser Arg Ser Ser
900 905 910

Arg Thr Gly Tyr His Thr Thr Asp Pro Val Gln Ala Thr Ala Ser Gln
915 920 925

Gly Ser Ala Thr Lys Pro Ile Ser Val Ser Asp Tyr Val Pro Tyr Val
930 935 940

Asn Ala Val Asp Ser Arg Trp Ser Ser Tyr Gly Asn Glu Ala Thr Ser
 945 950 955 960

Ser Ala His Tyr Val Glu Arg Asp Arg Phe Ile Val Thr Asp Leu Ser
 965 970 975

Gly His Arg Lys His Ser Ser Thr Gly Asp Leu Leu Ser Leu Glu Leu
 980 985 990

Gln Gln Ala Lys Ser Asn Ser Leu Leu Leu Gln Arg Glu Ala Asn Ala
 995 1000 1005

Leu Ala Met Gln Gln Lys Trp Asn Ser Leu Asp Glu Gly Arg His
 1010 1015 1020

Leu Thr Leu Asn Leu Leu Ser Lys Glu Ile Glu Leu Arg Asn Glu
 1025 1030 1035

Leu Gln Ser Asp Tyr Thr Glu Asp Ala Thr Asp Thr Lys Pro Asp
 1040 1045 1050

Arg Asp Ile Glu Leu Glu Leu Ser Ala Leu Asp Thr Asp Glu Pro
 1055 1060 1065

Asp Gly Gln Ser Glu Pro Ile Glu Glu Ile Leu Asp Ile Gln Leu
 1070 1075 1080

Gly Ile Ser Ser Gln Asn Asp Gln Leu Leu Asn Gly Met Ala Val
 1085 1090 1095

Glu Asn Gly His Pro Val Gln Gln His Gln Lys Glu Pro Pro Lys
 1100 1105 1110

Gln Lys Lys Gln Ser Leu Gly Glu Asp His Val Ile Leu Glu Glu
 1115 1120 1125

Gln Lys Thr Ile Leu Pro Val Thr Ser Cys Phe Ser Gln Pro Leu
 1130 1135 1140

Pro Val Ser Ile Ser Asn Ala Ser Cys Leu Pro Ile Thr Thr Ser
 1145 1150 1155

Val Ser Ala Gly Asn Leu Ile Leu Lys Thr His Val Met Ser Glu
 1160 1165 1170

Asp Lys Asn Asp Phe Leu Lys Pro Val Ala Asn Gly Lys Met Val
 1175 1180 1185

Asn Ser
1190

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<212> DNA
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<210> 7
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<213> Homo sapiens

<400> 7

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20 25 30

Val Cys Glu Asp Val Phe Ser Leu Gln Gly Asp Lys Val Pro Arg Leu
35 40 45

Leu Leu Cys Gly His Thr Val Cys His Asp Cys Leu Thr Arg Leu Pro
50 55 60

Leu His Gly Arg Ala Ile Arg Cys Pro Phe Asp Arg Gln Val Thr Asp
65 70 75 80

Leu Gly Asp Ser Gly Val Trp Gly Leu Lys Lys Asn Phe Ala Leu Leu
85 90 95

Glu Leu Leu Glu Arg Leu Gln Asn Gly Pro Ile Gly Gln Tyr Gly Ala
100 105 110

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Ala Glu Glu Ser Ile Gly Ile Ser Gly Glu Ser Ile Ile Arg Cys Asp
115 120 125

Glu Asp Glu Ala His Leu Ala Ser Val Tyr Cys Thr Val Cys Ala Thr
130 135 140

His Leu Cys Ser Glu Cys Ser Gln Val Thr His Ser Thr Lys Thr Leu
145 150 155 160

Ala Lys His Arg Arg Val Pro Leu Ala Asp Lys Pro His Glu Lys Thr
165 170 175

Met Cys Ser Gln His Gln Val His Ala Ile Glu Phe Val Cys Leu Glu
180 185 190

Glu Gly Cys Gln Thr Ser Pro Leu Met Cys Cys Val Cys Lys Glu Tyr
195 200 205

Gly Lys His Gln Gly His Lys His Ser Val Leu Glu Pro Glu Ala Asn
210 215 220

Gln Ile Arg Ala Ser Ile Leu Asp Met Ala His Cys Ile Arg Thr Phe
225 230 235 240

Thr Glu Glu Ile Ser Asp Tyr Ser Arg Lys Leu Val Gly Ile Val Gln
245 250 255

His Ile Glu Gly Gly Glu Gln Ile Val Glu Asp Gly Ile Gly Met Ala
260 265 270

His Thr Glu His Val Pro Gly Thr Ala Glu Asn Ala Arg Ser Cys Ile
275 280 285

Arg Ala Tyr Phe Tyr Asp Leu His Glu Thr Leu Cys Arg Gln Glu Glu
290 295 300

Met Ala Leu Ser Val Val Asp Ala His Val Arg Glu Lys Leu Ile Trp
305 310 315 320

Leu Arg Gln Gln Gln Glu Asp Met Thr Ile Leu Leu Ser Glu Val Ser
325 330 335

Ala Ala Cys Leu His Cys Glu Lys Thr Leu Gln Gln Asp Asp Cys Arg
340 345 350

Val Val Leu Ala Lys Gln Glu Ile Thr Arg Leu Leu Thr Glu Leu Gln
355 360 365

Lys Gln Gln Gln Gln Phe Thr Glu Val Ala Asp His Ile Gln Leu Asp
370 375 380

Ala Ser Ile Pro Val Thr Phe Thr Lys Asp Asn Arg Val His Ile Gly
385 390 395 400

Pro Lys Met Glu Ile Arg Val Val Thr Leu Gly Leu Asp Gly Ala Gly
405 410 415

Lys Thr Thr Ile Leu Phe Lys Leu Lys Gln Asp Glu Phe Met Gln Pro
420 425 430

Ile Pro Thr Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Leu
435 440 445

Lys Phe Thr Ile Trp Asp Val Gly Gly Lys His Lys Leu Arg Pro Leu
450 455 460

Trp Lys His Tyr Tyr Leu Asn Thr Gln Ala Val Val Phe Val Val Asp
465 470 475 480

Ser Ser His Arg Asp Arg Ile Ser Glu Ala His Ser Glu Leu Ala Lys
485 490 495

Leu Leu Thr Glu Lys Glu Leu Arg Asp Ala Leu Leu Leu Ile Phe Ala
500 505 510

Asn Lys Gln Asp Val Ala Gly Ala Leu Ser Val Glu Glu Ile Thr Glu
515 520 525

Leu Leu Ser Leu His Lys Leu Cys Cys Gly Arg Ser Trp Tyr Ile Gln
530 535 540

Gly Cys Asp Ala Arg Ser Gly Met Gly Leu Tyr Glu Gly Leu Asp Trp
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Leu Ser Arg Gln Leu Val Ala Ala Gly Val Leu Asp Val Ala
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<211> 317
<212> PRT
<213> Homo sapiens

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20 25 30

His Cys Glu His Ala Phe Cys Asn Ala Cys Ile Thr Gln Trp Phe Ser
35 40 45

Gln Gln Gln Thr Cys Pro Val Asp Arg Ser Val Val Thr Val Ala His
50 55 60

Leu Arg Pro Val Pro Arg Ile Met Arg Asn Met Leu Ser Lys Leu Gln
65 70 75 80

Ile Ala Cys Asp Asn Ala Val Phe Gly Cys Ser Ala Val Val Arg Leu
85 90 95

Asp Asn Leu Met Ser His Leu Ser Asp Cys Glu His Asn Pro Lys Arg
100 105 110

Pro Val Thr Cys Glu Gln Gly Cys Gly Leu Glu Met Pro Lys Asp Glu
115 120 125

Leu Pro Asn His Asn Cys Ile Lys His Leu Arg Ser Val Val Gln Gln
130 135 140

Gln Gln Thr Arg Ile Ala Glu Leu Glu Lys Thr Ser Ala Glu His Lys
145 150 155 160

His Gln Leu Ala Glu Gln Lys Arg Asp Ile Gln Leu Leu Lys Ala Tyr
165 170 175

Met Arg Ala Ile Arg Ser Val Asn Pro Asn Leu Gln Asn Leu Glu Glu
180 185 190

Thr Ile Glu Tyr Asn Glu Ile Leu Glu Trp Val Asn Ser Leu Gln Pro
195 200 205

Ala Arg Val Thr Arg Trp Gly Gly Met Ile Ser Thr Pro Asp Ala Val
210 215 220

Leu Gln Ala Val Ile Lys Arg Ser Leu Val Glu Ser Gly Cys Pro Ala
225 230 235 240

Ser Ile Val Asn Glu Leu Ile Glu Asn Ala His Glu Arg Ser Trp Pro
245 250 255

Gln Gly Leu Ala Thr Leu Glu Thr Arg Gln Met Asn Arg Arg Tyr Tyr
Page 25

Glu Asn Tyr Val Ala Lys Arg Ile Pro Gly Lys Gln Ala Val Val Val
275 280 285

Met Ala Cys Glu Asn Gln His Met Gly Asp Asp Met Val Gln Glu Pro
290 295 300

Gly Leu Val Met Ile Phe Ala His Gly Val Glu Glu Ile
305 310 315

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Ala Leu Lys Asn Ser Gln Arg Leu Ser Val Arg Gly Ser Ile Gln Ser
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Asn Met Ser Ser Arg Thr Asp Gly Ile Leu Gln Arg Arg Leu Asp Glu
35 40 45

Thr Glu Arg Lys Leu Ala Lys Thr Ser Ala Glu Leu Lys Ala Lys Asp
50 55 60

Glu Lys Leu Lys Lys Glu Thr Ala Ser Leu Glu Ala Ser Arg Glu Ala
65 70 75 80

His Arg Leu Leu Gln Glu Glu Ser Asn Lys Ser Lys Val Ser Val Met
85 90 95

Arg Leu Thr Phe Lys Leu Asn Arg Ile Thr His Glu Ser Val Lys Glu
100 105 110

Gln Ala Val Leu Lys Lys Lys Leu Leu Asp Cys Glu Thr Arg Leu Ala
115 120 125

Thr Tyr Ser Glu Cys Leu Val Cys Tyr Gln Lys Phe Asp Glu Asn Thr
130 135 140

Arg Ile Pro Arg Val Met Asp Cys Gly His Thr Leu Cys Asp Phe Cys
145 150 155 160

Ile Asn Gln Ile Val Lys Met Ala Gly Cys Tyr Ser Ala Thr Cys Pro
Page 26

His Asn Leu Cys Arg Ser Cys Ile Asn Lys Leu Thr Gly Asn Gly Ile
Page 27

180

185

190

Val Lys Cys Pro Phe Asp Arg Leu Asp Thr Arg Val Arg Val Thr Gly
 195 200 205

Leu Pro Arg Asn Leu Ala Leu Ile Asn Leu
 210 215

<210> 11
 <211> 1048
 <212> PRT
 <213> Caenorhabditis elegans

<400> 11

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Ser Ile Cys Asn Arg His Phe Asn Glu Thr Phe Leu Pro Val Ser Leu
 20 25 30

Ile Cys Gly His Val Ile Cys Arg Lys Cys Ala Glu Lys Pro Glu Asn
 35 40 45

Gln Thr Lys Pro Cys Pro His Asp Asp Trp Lys Thr Thr His Ser Pro
 50 55 60

Ser Glu Tyr Pro Asn Asn Val Ala Leu Leu Ser Val Ile Phe Pro Arg
 65 70 75 80

Lys Gln Cys Met Thr Leu Ser Gly Ala Val Ser Glu Ala Glu Lys Arg
 85 90 95

Val Asp Gln Leu Ser Ile Gln Ile Ala Lys Phe Phe Arg Glu Ala Asp
 100 105 110

Ser Glu Arg Gly Gly Thr Val Ser Ser Arg Glu Ile Ser Arg Thr Leu
 115 120 125

Gln Arg Lys Val Leu Ala Leu Leu Cys Tyr Gln Trp Arg Glu Val Asp
 130 135 140

Gly Arg Leu Lys Thr Leu Lys Met Cys Arg Gly Ile Ser Glu Arg Val
 145 150 155 160

Met Ile Glu Ile Ile Leu Ser Ile Gln Ser Asn Thr His Val Ser Ser
 165 170 175

Gln Leu Trp Ser Ala Val Arg Ala Arg Gly Cys Gln Phe Leu Gly Pro
 Page 28

180

185

190

Ala Met Gln Asp Asp Val Leu Arg Leu Ile Leu Met Thr Leu Glu Thr
 195 200 205

Gly Glu Cys Ile Ala Arg Lys Asn Leu Val Met Tyr Val Val Gln Thr
 210 215 220

Leu Ala Ser Asp Tyr Pro Gln Val Ser Lys Thr Cys Val Gly His Val
 225 230 235 240

Val Gln Leu Leu Tyr Arg Ala Ser Cys Phe Asn Val Leu Lys Arg Asp
 245 250 255

Gly Glu Ser Ser Leu Met Gln Leu Lys Glu Glu Phe Arg Thr Tyr Glu
 260 265 270

Ser Leu Arg Arg Glu His Asp Ser Gln Ile Val Gln Ile Ala Phe Glu
 275 280 285

Ser Gly Leu Arg Ile Gly Pro Asp Gln Trp Ser Ala Leu Leu Tyr Ala
 290 295 300

Asp Gln Ser His Arg Ser His Met Gln Ser Ile Ile Asp Lys Leu Gln
 305 310 315 320

Ser Lys Asn Ser Tyr Gln Gln Gly Val Glu Glu Leu Arg Ala Leu Ala
 325 330 335

Gly Ser Gln Thr Ser Met Leu Val Pro Ala Tyr Arg Tyr Phe Leu Thr
 340 345 350

Gln Val Ile Pro Cys Leu Glu Phe Phe Ala Gly Ile Glu His Glu Asp
 355 360 365

Thr Ser Met Arg Met Ile Gly Asp Ala Leu His Gln Ile Arg Ile Leu
 370 375 380

Leu Lys Leu His Cys Ser Gln Asp Asp Leu Arg Lys Met Pro Lys Glu
 385 390 395 400

Glu Arg Arg Gly Val Ile Leu Gln Ala Glu Val Pro Gly Gly Met Gly
 405 410 415

Gly Gly Pro Gly Gly Ser Gly Gly Ala Glu Ala Gly Arg Ile Gly Gly
 420 425 430

Leu His Pro Leu Tyr Ser Gln Ile Asp Glu Thr Gly Arg Ser Ile Ser
 435 440 445

Arg Thr Asn Pro Lys Asp Asn Ser His Asn Ser Pro Gln Thr Pro Pro
 450 455 460

Lys Gln Pro Arg Gln Lys Arg Tyr Gln Met Gly Ile Pro Pro Asn Arg
 465 470 475 480

Met Gly Tyr Ser Ser Asp Ala Pro Pro Phe Ile Pro Ser His Gln Gln
 485 490 495

Gln Pro Pro Pro Gln Phe Phe Asn Ser Gln His Leu Pro Gln Arg Phe
 500 505 510

Arg Gly Gly Arg Gln Arg Gly Ala Pro Pro Pro Pro Pro Pro Gln Pro
 515 520 525

Met Pro Met Leu Ile Gly Tyr Asp Met Pro Gly Ala Pro Met Met Gln
 530 535 540

Ala Thr Glu Val Leu Thr Ala Asp Gly Gln Met Val Asn Gly Thr Pro
 545 550 555 560

Gln Arg Val Val Ile Met Gln Ser Pro Thr His Leu Pro Gly Gly Pro
 565 570 575

Val Val Met Ile Pro Gln Gln Gln Met Val Pro Pro Pro Gln Ser Met
 580 585 590

Thr Pro Val Gly Gly Pro Met Gly Pro Met Gly Pro Met Thr Pro Ser
 595 600 605

Ile Pro Val Gln Val Pro Pro Asn Thr Met Trp Thr Ala Thr Ser Pro
 610 615 620

Thr Gly Ser Val Ile Tyr Pro Ala Ala Ser Pro Pro Gly Gln Pro Pro
 625 630 635 640

His Thr Ile Trp Ile Gln Ser Ile Gly Val Phe Lys Arg Lys Ser Asn
 645 650 655

Phe Leu Lys Ile Val Arg Lys Ile Ser Phe Phe Leu Asn Phe Tyr Asp
 660 665 670

Phe Phe Leu Ile Leu Arg Lys Leu Lys Lys Glu Lys Lys Gly Ala Asp
 675 680 685

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Ile Glu Phe Phe Glu Lys Ile Lys Ser Thr Asp Phe Lys Lys Tyr Pro
690 695 700

Ser Ser Phe Ser Arg Thr Asp Gly Asn Met Phe Pro Met Phe Asp Arg
705 710 715 720

Gly Ser Gly Gly Met Val Trp Gly Pro Gly Thr Met Leu Arg Glu Ser
725 730 735

Gly Ala Asp Ala Glu Gln Leu Leu Ala Lys Arg Tyr Glu Ile Leu Lys
740 745 750

Arg Leu Gln Pro Ser Glu Asp Asp Asp Asp Pro Glu Asp Gly Gly Ile
755 760 765

Gly His Val Ser Tyr Thr Val Ala Ser Ser Val Leu Asp Asp Arg Met
770 775 780

Asp His His Pro Leu Thr Met Ile Pro Val Pro Thr Ile Asp Leu Pro
785 790 795 800

Ala Ile Pro Ile Ser Phe Ala Asn Met Pro Thr Glu Glu Thr Met Thr
805 810 815

Met Ile Gly Glu Met Val Gln Asn Arg Pro Arg Ala Pro Ser Leu Thr
820 825 830

Ala Pro Ser Ser Asn Gln Pro Met Asn Val Asn Ala Ser Ala Ser Ala
835 840 845

Thr Val Gln Ala Glu Cys Glu Asn Arg Lys Ile Leu Asp Phe Pro Leu
850 855 860

Lys Tyr Arg Lys Met Thr Leu Met Phe Glu Lys Val Ser Thr Cys Phe
865 870 875 880

His Val Thr Leu Leu Lys Asp Tyr Met Val Phe Tyr Val Leu Asn Thr
885 890 895

Leu Asn Phe Ala Ser Arg Trp Pro Arg Arg Arg Arg Ala Ala Thr Ile
900 905 910

Pro Gln Pro Val Ile Pro Met Val Gln Val Pro Val Gln Val Pro Ile
915 920 925

Val Pro Ala Glu Asn Phe Asn Pro Asn Val Pro Pro Pro Pro Pro Pro
930 935 940

Pro Gln Gly Gln Pro Met Leu Val Asp Ser Ala Ile Gly Leu Leu Thr
945 950 955 960

Pro Ile Arg Pro Ile Leu Val Ala His Pro Gln Asn Val Val Ser Asn
965 970 975

Ser Leu Asp Lys Ile Val Asp Val Lys Glu Arg Ile Ser Glu Ala Gln
980 985 990

Gly Asn Ala Ser Glu Ala Glu Asn Ala His Leu Arg Met Glu Leu Arg
995 1000 1005

Met Ala Glu Ser Gln Met Ala His Leu Asp Pro Tyr Thr Lys Asn
1010 1015 1020

Asn Cys Leu Leu Arg Ala Leu Gln Gln Val Asp Met Glu Leu Gln
1025 1030 1035

Gln Leu His Leu Asn Pro Thr Val Glu Gly
1040 1045

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<212> DNA
<213> Homo sapiens

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Met Pro Gly Phe Asp Tyr Lys Phe Leu
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gag aag ccc aag cga cgg ctg ctg tgc cca ctg tgc ggg aag ccc atg 160
Glu Lys Pro Lys Arg Arg Leu Leu Cys Pro Leu Cys Gly Lys Pro Met
10 15 20 25

cgc gag cct gtg cag gtt tcc acc tgc ggc cac cgt ttc tgc gat acc 208
Arg Glu Pro Val Gln Val Ser Thr Cys Gly His Arg Phe Cys Asp Thr
30 35 40

tgc ctg cag gag ttc ctc agt gaa gga gtc ttc aag tgc cct gag gac 256
Cys Leu Gln Glu Phe Leu Ser Glu Gly Val Phe Lys Cys Pro Glu Asp
45 50 55

cag ctt cct ctg gac tat gcc aag atc tac cca gac ccg gag ctg gaa 304
Gln Leu Pro Leu Asp Tyr Ala Lys Ile Tyr Pro Asp Pro Glu Leu Glu
60 65 70

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gta Val	caa Gln 75	gta Val	ttg Leu	ggc Gly	ctg Leu	cct Pro 80	atc Ile	cgc Arg	tgc Cys	atc Ile	cac His 85	agt Ser	gag Glu	gag Glu	ggc Gly	352
tgc Cys 90	cgc Arg	tgg Trp	agt Ser	ggg Gly	cca Pro 95	cta Leu	cgt Arg	cat His	cta Leu	cag Gln 100	ggc Gly	cac His	ctg Leu	aat Asn	acc Thr 105	400
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agc Ser	cgc Arg	cgt Arg	gat Asp 125	cta Leu	cct Pro	gca Ala	cac His	ttg Leu 130	cag Gln	cat His	gac Asp	tgc Cys	ccc Pro 135	aag Lys	cgg Arg	496
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ttc Phe	gtc Val	ttt Phe	gac Asp 205	acc Thr	atc Ile	cag Gln	agc Ser	cac His 210	cag Gln	tac Tyr	cag Gln	tgc Cys	cca Pro 215	agg Arg	ctg Leu	736
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tgc Cys 250	cca Pro	ttc Phe	aaa Lys	gac Asp	tcc Ser 255	ggc Gly	tgc Cys	aag Lys	cac His	agg Arg 260	tgc Cys	cct Pro	aag Lys	ctg Leu	gca Ala 265	880
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gag Glu	ctg Leu	gag Glu 300	gag Glu	cta Leu	tca Ser	gtg Val	ggc Gly 305	agt Ser	gat Asp	ggc Gly	gtg Val 310	ctc Leu	atc Ile	tgg Trp	aag Lys	1024
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cac ctc tca ctg tac att cgt gtg ctg cct ggt gcc ttt gac aat ctc His Leu Ser Leu Tyr Ile Arg Val Leu Pro Gly Ala Phe Asp Asn Leu 365 370 375	1216
ctt gag tgg ccc ttt gcc cgc cgt gtc acc ttc tcc ctg ctg gat cag Leu Glu Trp Pro Phe Ala Arg Arg Val Thr Phe Ser Leu Leu Asp Gln 380 385 390	1264
agc gac cct ggg ctg gct aaa cca cag cac gtc act gag acc ttc cac Ser Asp Pro Gly Leu Ala Lys Pro Gln His Val Thr Glu Thr Phe His 395 400 405	1312
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tcc ctg gat gag agt tct ctg ggc ttt ggt tat ccc aag ttc atc tcc Ser Leu Asp Glu Ser Ser Leu Gly Phe Gly Tyr Pro Lys Phe Ile Ser 430 435 440	1408
cac cag gac att cga aag cga aac tat gtg cgg gat gat gca gtc ttc His Gln Asp Ile Arg Lys Arg Asn Tyr Val Arg Asp Asp Ala Val Phe 445 450 455	1456
atc cgt gct gct gtt gaa ctg ccc cgg aag atc ctc agc tga Ile Arg Ala Ala Val Glu Leu Pro Arg Lys Ile Leu Ser 460 465 470	1498
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aaatccggaa ttgtatttat t	1999

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 <211> 470
 <212> PRT
 <213> Homo sapiens

<400> 13

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 35 40 45
 Glu Gly Val Phe Lys Cys Pro Glu Asp Gln Leu Pro Leu Asp Tyr Ala
 50 55 60
 Lys Ile Tyr Pro Asp Pro Glu Leu Glu Val Gln Val Leu Gly Leu Pro
 65 70 75 80
 Ile Arg Cys Ile His Ser Glu Glu Gly Cys Arg Trp Ser Gly Pro Leu
 85 90 95
 Arg His Leu Gln Gly His Leu Asn Thr Cys Ser Phe Asn Val Ile Pro
 100 105 110
 Cys Pro Asn Arg Cys Pro Met Lys Leu Ser Arg Arg Asp Leu Pro Ala
 115 120 125
 His Leu Gln His Asp Cys Pro Lys Arg Arg Leu Lys Cys Glu Phe Cys
 130 135 140
 Gly Cys Asp Phe Ser Gly Glu Ala Tyr Glu Ser His Glu Gly Met Cys
 145 150 155 160
 Pro Gln Glu Ser Val Tyr Cys Glu Asn Lys Cys Gly Ala Arg Met Met
 165 170 175
 Arg Gly Leu Leu Ala Gln His Ala Thr Ser Glu Cys Pro Lys Arg Thr
 180 185 190
 Gln Pro Cys Thr Tyr Cys Thr Lys Glu Phe Val Phe Asp Thr Ile Gln
 195 200 205
 Ser His Gln Tyr Gln Cys Pro Arg Leu Pro Val Ala Cys Pro Asn Gln
 210 215 220
 Cys Gly Val Gly Thr Val Ala Arg Glu Asp Leu Pro Gly His Leu Lys
 225 230 235 240
 Asp Ser Cys Asn Thr Ala Leu Val Leu Cys Pro Phe Lys Asp Ser Gly
 245 250 255

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Cys Lys His Arg Cys Pro Lys Leu Ala Met Ala Arg His Val Glu Glu
260 265 270

Ser Val Lys Pro His Leu Ala Met Met Cys Ala Leu Val Ser Arg Gln
275 280 285

Arg Gln Glu Leu Gln Glu Leu Arg Arg Glu Leu Glu Glu Leu Ser Val
290 295 300

Gly Ser Asp Gly Val Leu Ile Trp Lys Ile Gly Ser Tyr Gly Arg Arg
305 310 315 320

Leu Gln Glu Ala Lys Ala Lys Pro Asn Leu Glu Cys Phe Ser Pro Ala
325 330 335

Phe Tyr Thr His Lys Tyr Gly Tyr Lys Leu Gln Val Ser Ala Phe Leu
340 345 350

Asn Gly Asn Gly Ser Gly Glu Gly Thr His Leu Ser Leu Tyr Ile Arg
355 360 365

Val Leu Pro Gly Ala Phe Asp Asn Leu Leu Glu Trp Pro Phe Ala Arg
370 375 380

Arg Val Thr Phe Ser Leu Leu Asp Gln Ser Asp Pro Gly Leu Ala Lys
385 390 395 400

Pro Gln His Val Thr Glu Thr Phe His Pro Asp Pro Asn Trp Lys Asn
405 410 415

Phe Gln Lys Pro Gly Thr Trp Arg Gly Ser Leu Asp Glu Ser Ser Leu
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Gln Ile Asp Glu Ala Pro Ala Thr Lys Arg His Ser Ser Ala Lys Asp
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Asp Arg Lys Ala Val Gly Thr Pro Ala Gly Gly Gly Phe Pro Arg Arg
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cagttttaat atattattct tcaacgacat tttttgtaac tttacacttt tttggttatt	3113
ttattttaaa aaaatgaaaa attaatTTaa aaaaatgcaa aaaactgttg gattatttat	3173
tttagaaatt ccccccttg tgttggaactg caaattgagt ttctttctct ttaggccttt	3233
cacaactagg actgagaatg tatgtaaaag ttctgtgaca gtacagaagg aaaacaactt	3293
tttatgtata gcttctaaaa ggggaaaaaa aaaaaaaga gaaaccttt gacttccacg	3353
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tccaatgtta atgtaaacag aactggcaca cacacattaa gatgaatgta attattattc	3473
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gaaaaaaaaac tttttgtaac gactatttgc agtttaaaaa tcaataaacc ccgttttttc	3593
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 <213> Homo sapiens

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Arg His Ser Val Thr Leu Pro Ser Ser Lys Phe His Gln Asn Gln Leu	35 40 45
Leu Ser Ser Leu Lys Gly Glu Pro Ala Pro Ala Leu Ser Ser Arg Asp	50 55 60
Ser Arg Phe Arg Asp Arg Ser Phe Ser Glu Gly Gly Glu Arg Leu Leu	65 70 75 80
Pro Thr Gln Lys Gln Pro Gly Gly Gly Gln Val Asn Ser Ser Arg Tyr	85 90 95
Lys Thr Glu Leu Cys Arg Pro Phe Glu Glu Asn Gly Ala Cys Lys Tyr	100 105 110
Gly Asp Lys Cys Gln Phe Ala His Gly Ile His Glu Leu Arg Ser Leu	115 120 125
Thr Arg His Pro Lys Tyr Lys Thr Glu Leu Cys Arg Thr Phe His Thr	130 135 140

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Ile Gly Phe Cys Pro Tyr Gly Pro Arg Cys His Phe Ile His Asn Ala
145 150 155 160

Glu Glu Arg Arg Ala Leu Ala Gly Ala Arg Asp Leu Ser Ala Asp Arg
165 170 175

Pro Arg Leu Gln His Ser Phe Ser Phe Ala Gly Phe Pro Ser Ala Ala
180 185 190

Ala Thr Ala Ala Ala Thr Gly Leu Leu Asp Ser Pro Thr Ser Ile Thr
195 200 205

Pro Pro Pro Ile Leu Ser Ala Asp Asp Leu Leu Gly Ser Pro Thr Leu
210 215 220

Pro Asp Gly Thr Asn Asn Pro Phe Ala Phe Ser Ser Gln Glu Leu Ala
225 230 235 240

Ser Leu Phe Ala Pro Ser Met Gly Leu Pro Gly Gly Gly Ser Pro Thr
245 250 255

Thr Phe Leu Phe Arg Pro Met Ser Glu Ser Pro His Met Phe Asp Ser
260 265 270

Pro Pro Ser Pro Gln Asp Ser Leu Ser Asp Gln Glu Gly Tyr Leu Ser
275 280 285

Ser Ser Ser Ser Ser His Ser Gly Ser Asp Ser Pro Thr Leu Asp Asn
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Ser Arg Arg Leu Pro Ile Phe Ser Arg Leu Ser Ile Ser Asp Asp
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agaaccctat atcacagtct cttcggcaac tcaaccaata agaactatta aggattaaca 420
ctagcc atg atg ccg aat gtt gct cca aac agc tac tat tta aac ata 468
Met Met Pro Asn Val Ala Pro Asn Ser Tyr Tyr Leu Asn Ile
1 5 10
ccg aat gcc aat tcg acc tca acg act acg tcc tcg atc ttt tct gat 516
Pro Asn Ala Asn Ser Thr Ser Thr Thr Thr Ser Ser Ile Phe Ser Asp
15 20 25 30
ctc aac aag gag tac gag tca aag att aaa gaa atc gaa gaa tat tat 564
Leu Asn Lys Glu Tyr Glu Ser Lys Ile Lys Glu Ile Glu Glu Tyr Tyr
35 40 45
ata aag aca ctg ctc aat gaa aat acc gat aat gat gac agc agc agc 612
Ile Lys Thr Leu Leu Asn Glu Asn Thr Asp Asn Asp Asp Ser Ser Ser
50 55 60
tcc gag ggg cat aat ata aat gaa acg gac att tta agt gaa tac tca 660
Ser Glu Gly His Asn Ile Asn Glu Thr Asp Ile Leu Ser Glu Tyr Ser
65 70 75
cca agg cct tct cct tgg tta cca tcc aaa cca aac tgt tat cat ccg 708
Pro Arg Pro Ser Pro Trp Leu Pro Ser Lys Pro Asn Cys Tyr His Pro
80 85 90
ttg gga gat ttt aaa gac ttg atc ata tca gat tcc aga cct aca aat 756
Leu Gly Asp Phe Lys Asp Leu Ile Ile Ser Asp Ser Arg Pro Thr Asn
95 100 105 110
aca tta cct att aat aac cct ttc gca ggc aat aat aac atc tca aca 804
Thr Leu Pro Ile Asn Asn Pro Phe Ala Gly Asn Asn Asn Ile Ser Thr
115 120 125
ctt gct aca act gag aaa aaa cgt aag aaa agg tca ctc gaa gtt aga 852
Leu Ala Thr Thr Glu Lys Lys Arg Lys Lys Arg Ser Leu Glu Val Arg
130 135 140
gtt aac cct act tac acg aca agt gca ttt tca tta ccc ctg aca gcg 900
Val Asn Pro Thr Tyr Thr Thr Ser Ala Phe Ser Leu Pro Leu Thr Ala
145 150 155
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Glu Asn Leu Gln Lys Leu Ser Gln Val Asp Ser Gln Ser Thr Gly Leu
160 165 170
cca tac aca ctt cca att cag aaa aca aca aaa ctg gaa cct tgt aga 996
Pro Tyr Thr Leu Pro Ile Gln Lys Thr Thr Lys Leu Glu Pro Cys Arg
175 180 185 190
agg gca cct ttg cag ctt cct caa tta gtc aat aag acc tta tac aaa 1044
Arg Ala Pro Leu Gln Leu Pro Gln Leu Val Asn Lys Thr Leu Tyr Lys
195 200 205
act gag ctc tgt gaa tct ttt act att aaa ggc tat tgt aag tat gga 1092
Thr Glu Leu Cys Glu Ser Phe Thr Ile Lys Gly Tyr Cys Lys Tyr Gly
210 215 220
aat aaa tgc caa ttt gct cat ggt ctt aat gaa ctg aaa ttc aag aaa 1140

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Lys	Ser	Asn	Asn	Tyr	Arg	Thr	Lys	Pro	Cys	Ile	Asn	Trp	Ser	Lys	Leu	
	240					245					250					
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Gly	Tyr	Cys	Pro	Tyr	Gly	Lys	Arg	Cys	Cys	Phe	Lys	His	Gly	Asp	Asp	
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aag	gac	gtt	gaa	ata	tat	caa	aat	gct	aac	gat	gga	aga	agt	aag	gat	1284
Lys	Asp	Val	Glu	Ile	Tyr	Gln	Asn	Ala	Asn	Asp	Gly	Arg	Ser	Lys	Asp	
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acg	gcg	ttg	act	cca	ctt	cct	act	tcc	cta	gcc	cca	agc	aac	aac	gat	1332
Thr	Ala	Leu	Thr	Pro	Leu	Pro	Thr	Ser	Leu	Ala	Pro	Ser	Asn	Asn	Asp	
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Asn	Ile	Thr	Asn	Leu	Ser	Lys	Pro	Arg	Asn	Leu	His	Thr	Ser	Val	Lys	
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Ala	Leu	Gln	Arg	Met	Thr	Trp										
	320					325										
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<400> 21

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Thr	Leu	Leu	Asn	Glu	Asn	Thr	Asp	Asn	Asp	Asp	Ser	Ser	Ser	Ser	Glu	
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Gly	His	Asn	Ile	Asn	Glu	Thr	Asp	Ile	Leu	Ser	Glu	Tyr	Ser	Pro	Arg	
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Pro	Ser	Pro	Trp	Leu	Pro	Ser	Lys	Pro	Asn	Cys	Tyr	His	Pro	Leu	Gly	
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Asp Phe Lys Asp Leu Ile Ile Ser Asp Ser Arg Pro Thr Asn Thr Leu
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 Pro Ile Asn Asn Pro Phe Ala Gly Asn Asn Asn Ile Ser Thr Leu Ala
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 Thr Thr Glu Lys Lys Arg Lys Lys Arg Ser Leu Glu Val Arg Val Asn
 130 135 140
 Pro Thr Tyr Thr Thr Ser Ala Phe Ser Leu Pro Leu Thr Ala Glu Asn
 145 150 155 160
 Leu Gln Lys Leu Ser Gln Val Asp Ser Gln Ser Thr Gly Leu Pro Tyr
 165 170 175
 Thr Leu Pro Ile Gln Lys Thr Thr Lys Leu Glu Pro Cys Arg Arg Ala
 180 185 190
 Pro Leu Gln Leu Pro Gln Leu Val Asn Lys Thr Leu Tyr Lys Thr Glu
 195 200 205
 Leu Cys Glu Ser Phe Thr Ile Lys Gly Tyr Cys Lys Tyr Gly Asn Lys
 210 215 220
 Cys Gln Phe Ala His Gly Leu Asn Glu Leu Lys Phe Lys Lys Lys Ser
 225 230 235 240
 Asn Asn Tyr Arg Thr Lys Pro Cys Ile Asn Trp Ser Lys Leu Gly Tyr
 245 250 255
 Cys Pro Tyr Gly Lys Arg Cys Cys Phe Lys His Gly Asp Asp Lys Asp
 260 265 270
 Val Glu Ile Tyr Gln Asn Ala Asn Asp Gly Arg Ser Lys Asp Thr Ala
 275 280 285
 Leu Thr Pro Leu Pro Thr Ser Leu Ala Pro Ser Asn Asn Asp Asn Ile
 290 295 300
 Thr Asn Leu Ser Lys Pro Arg Asn Leu His Thr Ser Val Lys Ala Leu
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 Gln Arg Met Thr Trp
 325